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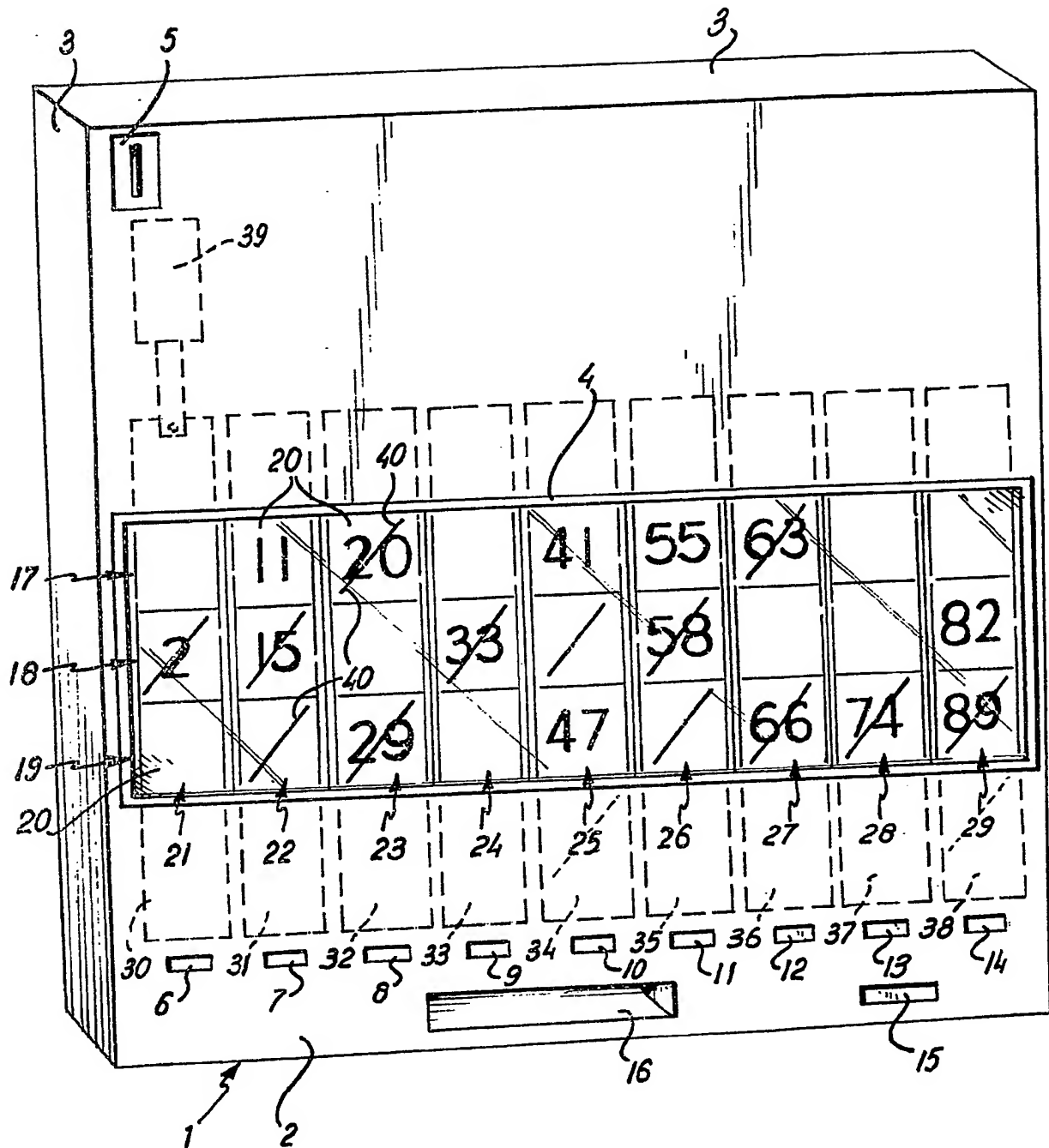
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## SPECIFICATION

## Entertainment machines

- 5 This invention relates to player-operable entertainment machines and is particularly concerned with coin (or token) operated amusement machines of the kind (hereinafter referred to as an amusement machine of the kind defined) which operates during
- 10 play of a game to select randomly a combination of symbols, a win indication being given in the event that this combination is of a predetermined winning nature.

- Amusement machines of the kind defined which
- 15 are fruit machines having exposed rotatable symbol-bearing reels are especially popular, and this can be attributed at least in part to the fact that many players derive assurance as to the randomness of the symbol selection procedure from the moving
- 20 reels.

- An object of the present invention is to provide a further form of entertainment machine which may be particularly appealing to a player and which may be suitable for use as an amusement machine of the
- 25 kind defined.

- According to one aspect of the present invention therefore there is provided a player-operable entertainment machine having a displayed array of symbols, a plurality of indicator elements movable
- 30 across said array between positions corresponding to different displayed states of said symbols, and an adjustment mechanism which is operable to effect and then terminate said movement thereby to give rise to the selection of a combination of displayed
- 35 states of said symbols.

With this arrangement a particularly appealing display can be presented to the player.

- The machine is suited to the playing of "bingo" in which case the said array represents a bingo card, although the invention is not necessarily restricted to this feature.
- 40

Most preferably the array comprises a plurality of side-by-side columns along which the indicator elements are movable.

- 45 Thus, and in accordance with a second aspect of the invention there is provided a player-operable entertainment machine having a plurality of columns each comprising one or more symbols arranged to be displayed to the player, and for each
- 50 column a respective indicator element, each column and the respective element being movable one relative to the other backwards and forwards longitudinally of said column between positions corresponding to different displayed states of said sym-
- 55 bols, and an adjustment mechanism being provided which is operable to effect and then terminate said relative movement thereby to give rise to the selection of a combination of displayed states of said symbols.

- 60 Preferably the adjustment mechanism operates to effect said movement in opposite directions repeatedly before terminating this. Termination may be effected after different periods of time, or different numbers of movements, for the respective indicator
- 65 elements.

Preferably also the relative movement takes place between two positions only, although if desired more positions may be utilised.

- The symbols may be of any suitable kind and the
- 70 columns may contain any suitable number and relative disposition of symbols. However, in a particularly preferred embodiment the symbols of the different columns are arranged in a plurality of rows, and may comprise numbers, especially where a
- 75 bingo card display is to be simulated. Also, the symbols are preferably provided on a flat display region.

- The form of the indicator elements and the manner in which the displayed states of the symbols are changed may be of any suitable nature. Thus, the
- 80 indicator elements may have cover parts which cover the symbols when disposed thereover, the symbols otherwise being revealed to the player. Other arrangements are also possible including for
- 85 example indicator elements having open parts (apertures or transparent regions) which reveal the symbols when disposed thereover, the symbols otherwise being covered.

- In one embodiment the indicator elements comprise transparent strips disposed over the columns and having cover parts in the form of obscuring
- 90 areas or marks (such as lines or crosses) which can be positioned over the symbols. This arrangement is particularly advantageous in the context of a simulated bingo card display since marks can be utilised
- 95 which give rise to simulation of crossed-through symbols.

- The symbols may be interspersed with gaps or blanks arranged in relation to the aforesaid cover or
- 100 open parts of the indicator elements so that for each column the cover or open parts are movable from one symbol to another or between one or more symbols and one or more gaps.

- The adjustment mechanism may take any suitable
- 105 form although conveniently this may comprise a respective solenoid connected to each indicator element, and an appropriate electronic control circuit may be provided to determine the movement and termination thereof.

- 110 Preferably the entertainment machine also includes a sensing system operable to detect the resulting selected combination of symbol states and to give a win indication in the event that this is of a predetermined winning nature. Conveniently this
- 115 may comprise electronic circuitry which monitors the operation of the adjustment mechanism. Where the adjustment mechanism comprises solenoids as mentioned above the electronic circuitry may form part of said control circuitry thereby responding to
- 120 the final operational states or final pattern of actuating pulses fed to the solenoids.

- Most preferably the entertainment machine of the invention comprises an amusement machine of the kind defined and a payout (or other reward) mechanism
- 125 may be provided to dispense a reward to the player when a winning combination is obtained. Where the displayed symbols simulate a bingo card, winning combinations may comprise a complete row or line of indicated symbols and/or a "full
- 130 house" and/or an indicated "feature" symbol.

The arrangement may be such that the machine is actuated, as by insertion of a coin or token into a coin or token mechanism and possibly also by operation of a press button or other player control, thereby to initiate play of a game resulting in selection of displayed symbol states which are then monitored for win assessment purposes. However, it is also possible to provide for player intervention in the selection procedure as for example by "hold" and/or "nudge" features analogous to those commonly provided in fruit machines. Thus, each column may be provided with a respective button which is made available to the player at the start of a game (on a regular or random basis) and which can then be operated to hold the respective indicator element against said movement. Similarly each column may be provided with a respective button which is made available to the player at the end of a game (on a regular or random basis) and which can then be operated to "nudge" the respective indicator element to effect further movement thereof (e.g. through one position).

The machine of the invention may have a housing which is floor-standing or wall-mounting with the columns disposed vertically. The front to back dimensions need not be large having regard to the mode of adjustment movement whereby conveniently the machine can be wall mounted in a relatively small space.

The invention will now be described further by way of example only and with reference to the accompanying drawing which is diagrammatic front view of one form of an entertainment machine according to the invention.

The entertainment machine shown in the drawing has a housing 1 which conveniently may be mounted on a wall or other upright building structure.

The housing is in the form of a box structure having a large rectangular front wall 2, a similar shaped wall (not shown) and narrow side walls 3. The front wall 2 has a central insert glass panel 4. Also on the front wall 2 there is a coin slot 5 above the panel 4, a row of nine buttons 6-14 beneath the panel 4, and a further press button 15 and a coin outlet 16 beneath the buttons 6-14.

Behind the panel 4 there is an internal flat wall on which is marked, as a flat display, a bingo card having three horizontal rows 17-19 of nine equal-size squares 20. The three rows 17-19 are arranged in alignment one above the other so as to define nine side-by-side upright columns 21-29. Each row has five squares 20 containing numbers. All numbers on the card are different and the numbers are distributed so that all columns 21-29 contain either one or two numbers.

The entire card is clearly visible to the player through the front panel 4.

The internal wall is formed from translucent material at least in the vicinity of the numbers and back lights are provided behind this wall so as to illuminate the squares containing numbers but not the other squares. These other squares are coloured black.

In front of the card there are nine vertical side-by-

side rigid rectangular transparent plastics strips 30-38 each superimposed over and of slightly smaller width than a respective one of the column 21-29.

The strips 30-38 are fixed at their top ends, above the card, to respective solenoids mounted within the housing 1 (only one of which is shown). At their bottom ends, below the card, the strips fit between guide runners (not shown). The arrangement is such that the strips can be moved independently up and down between a rest position (as shown in the drawing) and a position spaced above this rest position by a distance equal to the vertical height of one of the squares 20. The strips 30-38 are guided for movement in a common vertical plane parallel to and spaced slightly in front of the card. The solenoids 39 when actuated cause the strips 30-38 to move to their upper positions and when deactuated permit the strips to move down to the rest positions if desired assisted by downwardly acting return springs or weights or the like.

Each strip 30-38 has marked thereon either one oblique, opaque stroke 40 or two vertically spaced such strokes, corresponding to the number or numbers on the associated column 21-29. The strokes are arranged so that in one position of each strip the number or numbers of the respective columns are covered by the stroke or strokes on the strip. The strokes may comprise coloured (say red) stripes and/or grooves in the strips.

The solenoids 39 are connected to an electronic control circuit within the housing as also are the buttons 6-15, a coin mechanism behind the slot 5, and a payout mechanism connected to the outlet 16.

In use the machine operates as follows:

A player actuates the machine by pressing the button 15 after inserting an appropriate coin into the slot 5. Actuating current is fed to each solenoid 39 as a chain of on and off pulses so that the respective strip 30-38 is moved repeatedly up and down. The pulse chains may be synchronised so that the strips move up and down together, or to give a more interesting effect, the pulse chains may be staggered.

After a predetermined period of time a stopping procedure is initiated for the first strip (say the strip 30 at the extreme left as seen in the drawing), such stopping procedure resulting in termination of the pulse chain after a short random time elapse (or random number of pulses). The strip 30 stops in one of the above-described two positions depending on the last produced pulse. If the strip stops in the upper position this may be maintained by sustaining the current fed to the respective solenoid 39 or by use of a latching mechanism as desired. As shown in the drawing the left-most strip 30 has a single stroke 40 corresponding to the single number in the left-most column 21. If the strip 30 stops in the rest position the stroke 40 is superimposed over the number and is clearly visible (due to the back illumination of the number) so that the number appears to be crossed through. If, on the other hand, the strip 30 stops in the upper position, the stroke is superimposed over the empty top square 20 whereby the number is not crossed through and the stroke is not readily visible (since the top square is black and is not back

illuminated).

Movement of the other eight strips 31-38 is subsequently terminated in like manner one after the other from left to right. That is the second strip 31 stops at a randomly selected position very shortly after stopping of the first strip 30, and then the third strip 32 and so on.

When all strips have stopped there is displayed to the player a randomly selected pattern of crossed-through numbers on the card. As seen in the drawing, if the strips from left to right are respectively at the following positions: rest, upper, rest, rest, upper, upper, rest, rest, upper, then all numbers will be crossed through (i.e. a "full house"). With other combinations it is possible to attain "lines" (i.e. all numbers in a horizontal row 17-19 crossed through) to the extent that any one line and any combination of two lines is attainable.

The resulting combination is automatically assessed by the electronic circuitry to identify and evaluate this in relation to predetermined winning combination (i.e. a full house and the various line possibilities and possibly also selected feature numbers may constitute wins of different values).

Conveniently, logic circuitry can be used for win assessment purposes in so far as the final pulses fed to the different solenoids can be considered in terms of Os and Is.

If a win is detected an appropriate payout may be initiated and a new game can then be played. If latching mechanisms are used as mentioned above these may be released at the end of a game or at the start of a new game as desired.

Occasionally, on a randomly selected basis one or more of the buttons 6-14 are activated at the start of a game for hold purposes. The player then has the option, before pressing the start button 15, of pressing one or more buttons 6-14 to cause the associated strip or strips 30-38 to be held against movement during the ensuing game.

Also occasionally on a randomly selected basis one or more of the buttons 6-14 are actuated at the end of a game before win assessment is effected for nudge purposes. The player then has the option of pressing one or more buttons 6-14 to cause the associated strip or strips 30-38 to change its position (i.e. move from the rest to the upper position or vice versa).

With the embodiment described above the player is presented with an entertaining game having a particularly appealing display. Moreover, the machine is convenient to manufacture and install especially having regard to the relatively small front-to-back dimensions and due to the fact that the movement of the strips 30-38 and the interpretation of their end positions is effected using "on" and "off" pulses ideally suited to processing with digital control circuitry.

It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiment which are described by way of example only.

Thus, for example, the machine may have two or more bingo cards simultaneously displayed to the player and these may have separately operable

respective banks of indicator elements or, alternatively, the same indicator elements (appropriately extended) may be utilised for the different cards.

Also, the strips (30-38) need not move in front of the columns (21-29) but may move behind if the columns are formed from transparent material.

## CLAIMS

1. A player-operable entertainment machine having a displayed array of symbols, a plurality of indicator elements moveable across said array between positions corresponding to different displayed states of said symbols, and an adjustment mechanism which is operable to effect and then terminate said movement thereby to give rise to the selection of a combination of displayed states of said symbols.

2. A player-operable entertainment machine having a plurality of columns each comprising one or more symbols arranged to be displayed to the player, and for each column a respective indicator element, each column and the respective element being movable one relative to the other backwards and forwards longitudinally of said column between positions corresponding to different displayed states of said symbols, and an adjustment mechanism being provided which is operable to effect and then terminate said relative movement thereby to give rise to the selection of a combination of displayed states of said symbols.

3. A machine according to claim 2 wherein the adjustment mechanism operates to effect said movement in opposite directions repeatedly before terminating this.

4. A machine according to claim 2 or 3 wherein the relative movement takes place between two positions only.

5. A machine according to any one of claims 2 to 4 wherein said termination is effected after different periods of time, or different numbers of movements, for the respective indicator elements.

6. A machine according to any one of claims 2 to 5 wherein the symbols of the different columns are arranged in a plurality of rows.

7. A machine according to any one of claims 2 to 6 wherein the symbols are provided on a flat display region.

8. A machine according to any one of claims 2 to 7 wherein the indicator elements are movable in front of the columns and have cover parts which cover the symbols when disposed thereover, the symbols otherwise being revealed to the player.

9. A machine according to claim 8 wherein the indicator elements comprise transparent strips and said cover parts comprise obscuring areas or marks.

10. A machine according to claims 8 or 9 wherein said symbols are interspersed with gaps or blanks arranged in relation to said cover parts so that for each column the cover parts are moved from one symbol to another or between one or more symbols and one or more gaps.

11. A machine according to any one of claims 2 to 10 wherein the adjustment mechanism comprises a respective solenoid connected to each indicator

element.

12. A machine according to any one of claims 2 to 10 including a sensing system operable to detect the resulting selected combination of symbol states and to give a win indication in the event that this is of a predetermined winning nature.

13. A machine according to any one of claims 2 to 12 wherein a hold control is provided for each column which when made available to the player at the start of the game can be operated to hold the respective indicator element against said movement.

14. A machine according to any one of claims 2 to 12 wherein a nudge control is provided for each column which when made available to the player at the end of a game can be operated to nudge the respective indicator element to effect further movement thereof.

15. A machine according to claim 7 substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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